Market Readiness Update

CPUC Storage OIR Workshop

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Rosalie Roth
Contract Origination
Southern California Edison Company

Market Readiness – Gaps in Rules & Regulations

Uncertainty in market rules and regulations creates challenges in contracting for energy storage resources (ESRs). The gaps have created these emergent issues, among others:

	CAISO NGR	CPUC RA	Station Use	Customer Storage
Gap	• CAISO's Non-Generating Resources (NGR) model needs multiple configuration and use limitations capability • Currently no ability to tie bids to the state of charge and specifically limit the number of cycles or ranges for ESRs	• Under current Resource Adequacy (RA) rules, resources must be deliverable at max output for 4 hours on 3 consecutive days • For most ESRs it is more cost efficient to provide shorter duration discharge	• Storage technology is not completely analogous to generation and therefore presents the new issue of what is "station use" load and whether electricity which is lost during storage is charging energy or station power	• Unlock the potential for BTM storage to allow participation in the CAISO market • Its not clear how Distributed Energy Resources (DERs) can be aggregated and provide additional flexibility (e.g., regulation) to the energy market
Solution	• Update the NGR model to include contractual limitations in RDTs	• Allow 2 hour max output to count as QC[1] • Not require NQC[2] as a prerequisite to obtain an Effective Flexible Capacity (EFC)[3]	• A consistent definition across jurisdictions of what constitutes Station Use	• Clarify metering configurations for DERs • Establish market rules for customer-sided DERs

The lack of certainty in market rules and regulations increases operational costs which is subsumed into energy storage capacity prices

[1] QC, Qualifying Capacity is the maximum Resource Adequacy capacity that a resource may be eligible to provide; set by the CPUC or other local regulatory authority
[2] NQC, Net Qualifying Capacity is QC reduced for deliverability restrictions; set by the CAISO
[3] EFC, Effective Flexible Capacity is the ability to ramp a resource over a three hour period

Market Readiness – Proceedings and Initiatives Attempting to Bridge the Gap

CPUC Proceedings

- R.11-09-011 Rule 21 Interconnection
- R.12-06-013 Retail Rate Structures
- R.12-11-005 Distribution Generation V
- R.13-09-011 Demand Response
- R.13-11-007 Alternative-Fueled Vehicles OIR
- R.13-12-010 Long Term Procurement Plan
- R.14-07-002 Net Energy Metering
- R.14-08-013 Distribution Resources Plans
- R.14-10-003 Integrated Demand Side Management
- R.14-10-010 Resource Adequacy
- R.15-02-020 Renewable Portfolio Standard
- R.15-13-011 Policy and Implementation Refinements to ES Procurement Framework and Design Program

CAISO Initiatives

- Energy Storage and Aggregated Distributed Energy Resources
- Expanding Metering and Telemetry Options
- Interconnection Initiatives
- Reliability Services Initiative
- Flexible Resource Adequacy Criteria Phase 2 initiative

CEC Initiatives

- Renewable Portfolio Standard
- Integrated Energy Policy Report
- Zero Net Energy Building Action Plan